

Wildlife Populations:

Ospreys

Background

Ospreys (*Pandion haliaetus*) are large birds of prey, generally between 21-23 inches long with wingspans ranging from 4.5 to 6 feet. They have white underbellies, dark brown wings and back, and a dark stripe through each eye. Ospreys are unusual among raptors because their diet consists almost exclusively of fish. They have several morphological adaptations to their fish-eating lifestyle, which include relatively long legs, spiny footpads called spicules, long, sharp, curved claws, and a reversible outer toe to aid in gripping slippery fish. In addition, ospreys have dense oily plumage and efficient nasal valves that prevent water from entering the nostrils when the bird dives to catch a fish.

Ospreys have a worldwide distribution, wintering or breeding on every continent except Antarctica; they are so widely distributed because they are able to live almost anywhere as long as there are safe nest sites and shallow water with abundant fish. A nesting site is chosen based on its ability to support the osprey's bulky nest; it is also important for the site to be safe from ground-based predators, either by being difficult for a predator to climb or by being over water or on a small island. Ospreys have also been known to nest on buoys and channel markers, dead trees and artificial nest platforms. Additionally, they have been able to make use of various other types of man-made structures, such as power poles, duck blinds, communication towers, buildings and even billboards.

Ospreys hunt for fish on the wing, flapping and gliding 10 to 40 meters above the water. When an osprey spots a fish, it hovers briefly, and then dives toward the surface of the water. Just before hitting the water, the osprey swings its legs forward and bends its wings back, plunging feet-first into the water. The osprey uses strong, almost horizontal wing beats to lift itself and its prey from the water. Once airborne, the osprey rearranges the fish in its feet, carrying it with one foot in front of the other so that the fish is facing forward; it is believed that this adjustment makes the fish more aerodynamic, and easier to carry. The osprey then takes the fish to a perch, often near the nest, to eat.

In the late 19th and early 20th centuries, the main threats to osprey populations were egg collectors and shootings, however with the introduction and widespread use of the pesticide DDT (dichloro-

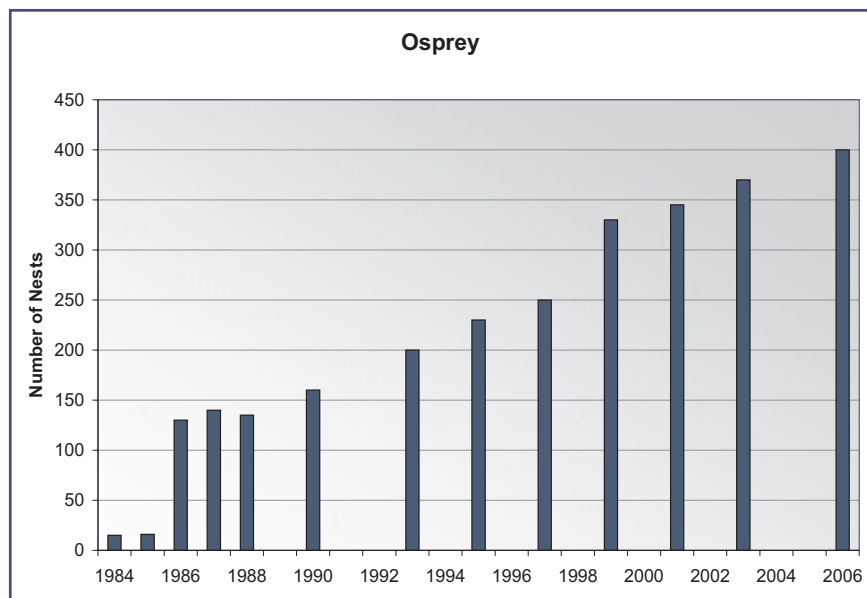
diphenyl-trichloroethane) in the 1950s, osprey populations in many areas declined sharply. During this period, 90% of breeding pairs disappeared from the Atlantic coast between New York City and Boston. However, with the banning of DDT, the osprey populations have largely rebounded; in fact, with the installation of artificial nest structures, reintroduction projects and new habitat created by reservoirs, the osprey populations have begun to increase and expand their range.¹



Status and Trends

The Department's Endangered and Nongame Species Program (ENSP) surveys nesting areas in May and June by aircraft, ground and boat to tally the population. Most nests continue to be located on the Atlantic coast, but nesting is increasing along the Delaware Bay and north up the Delaware River, with a few inland nests associated with lakes and reservoirs. Nests on the Atlantic coast and Delaware Bay marshes have been observed to be mostly located on structures made for ospreys, while in the upper Delaware Bay and Delaware River nests have been found on cell-phone or power transmission towers, providing for higher nesting than other structures.

In 2006, 400 nesting pairs of ospreys were found in New Jersey, having increased steadily from around 100 pairs in 1984 (see figure below). While the rate of population growth has slowed in the last seven years, nest success remains above the minimum necessary to maintain the population, suggesting the population should continue to grow.



More Information

http://www.nj.gov/dep/fgw/ensp/raptor_info.htm#osprey

<http://www.birds.cornell.edu/AllAboutBirds/BirdGuide/Osprey.html>

References

¹ http://animaldiversity.ummz.umich.edu/site/accounts/information/Pandion_haliaetus.html

Unless otherwise cited, the information in this report was provided by the DEP Division of Fish and Wildlife's "The 2006 Osprey Project in New Jersey" Report, which can be found at <http://www.nj.gov/>

Outlook and Implications

Ospreys are a valuable indicator species for monitoring the long-term health of large rivers, bays and estuaries. Ospreys are well-suited to this role because of their piscivorous, fish-eating, lifestyle and their known sensitivity to many contaminants. They are also relatively easy to study because they have conspicuous nests and are tolerant of short-term disturbance such as nest observations by researchers.

While osprey populations continue to rise, it is important to note that the osprey's recent success has been due in part to active human intervention and protection. Continuation of such efforts by ENSP and others is planned, and will likely be necessary well into the future.